

## 30 HP - Vacuum Producer Coupler Installation Instructions

1. Inspect vacuum producer for damage during shipping and handling.
2. Place the assembled frame in the area planned for final connections.
3. Always place unit on provided vibration isolator rubber pads. Use anchors to go through the holes on the floor plates. **DO NOT** tighten anchor nuts. Anchors are there to prevent unit from shifting and should **NOT** pull the unit tight to the floor. Vacuum producer should be floating on the vibration pads.
4. Level the frame, check in 3 different planes on the frame as shown below. Adjust as needed. Use shims (by installer) under the rubber pads to level the unit. If using more than two shims, the shims should be tack welded together to prevent them from coming apart.



5. Once the unit is in place and leveled, remove Coupler Guard from the frame.
6. Couplers have been pre-installed at the factory; 1-5/8in Coupler for the Motor and 1-1/2in for the Turbine.
7. Coupling Locking Collar should be loosely placed on the turbine shaft.

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8. Alignment Procedure:

- a. Align the teeth on the two couplers with each other.



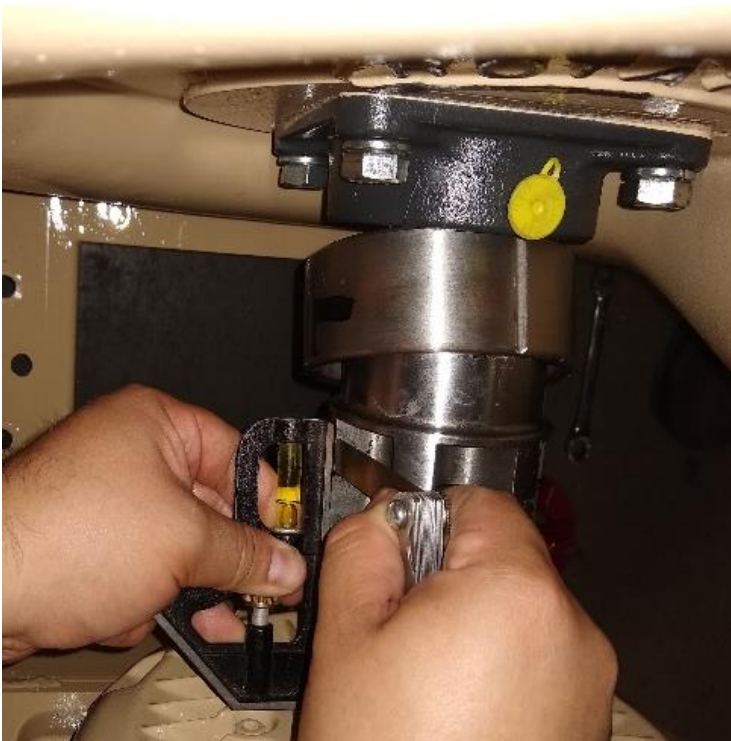
- b. Using the provided shims, check for axial and angular misalignment between the two shafts at every tooth of the coupler. The 0.060 shim combined with the 0.010 shim should be able to slide between each tooth pairing, but the 0.075 shim combined with the 0.010 should NOT be able to slide in. This will ensure the gap is within tolerance. (0.070" - 0.085")



- c. Using a straight edge and feeler gauge, check for parallel misalignment in both the vertical direction and horizontal direction. To check vertical misalignment, place a straight edge on the flat spot across a tooth on the turbine side coupler (See picture below). Using feeler gauge, measure gap between straight edge and flat spot on corresponding motor coupler tooth as shown below.



- d. The above procedure for parallel misalignment **MUST** be repeated to check for horizontal misalignment.



- e. To ensure proper alignment, feeler gauge that fits in the gap created by the straight edge should be less than 0.010" thick.

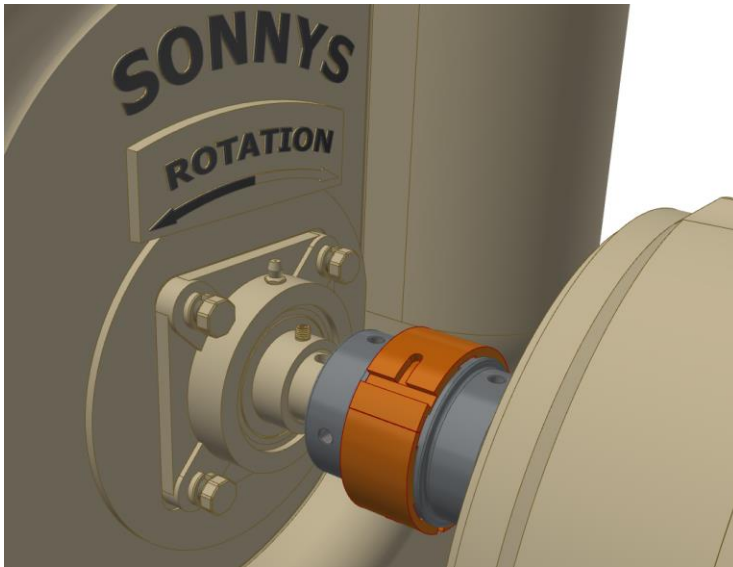
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- f. If vacuum producer does not pass the above checks for misalignment. It **MUST** be aligned prior to starting up the vacuum turbine.
- g. To adjust alignment, loosen the 4 bolts at the motor base.



- i. For parallel misalignment in the vertical direction: Add / Remove shims under the motor base.
    - ii. For parallel misalignment in the horizontal direction: Shift the motor slightly using a rubber mallet.
    - iii. For angular misalignment: Add / Remove shims from only the front two holes, or back two holes, depending on which direction motor must be tilted.
  - h. Once properly aligned, tighten motor base bolts to 57 ft-lbs.
  - i. Check alignment again using steps b through e.
9. Make electrical connections to the motor; by licensed electrician. Turn vacuum ON and OFF to create a short cycle of operation. Check for motor rotation during this test cycle. Motor rotation **MUST** match as shown by arrow on the turbine housing. If motor is initially running in the wrong direction, it **MUST** be corrected by licensed electrician.
10. Coupler Locking Collar Installation
- a. Once alignment has been confirmed to be within tolerances, proceed to install included red flexible coupler insert.
  - b. Wrap the provided red flexible insert around the couplers. Ensure it fully closes the loop around the couplers. (Part # 10013337)
  - c. Groove on the flexible coupler insert should point away from rotation of turbine, as shown below. Turbine rotation is marked on the housing.

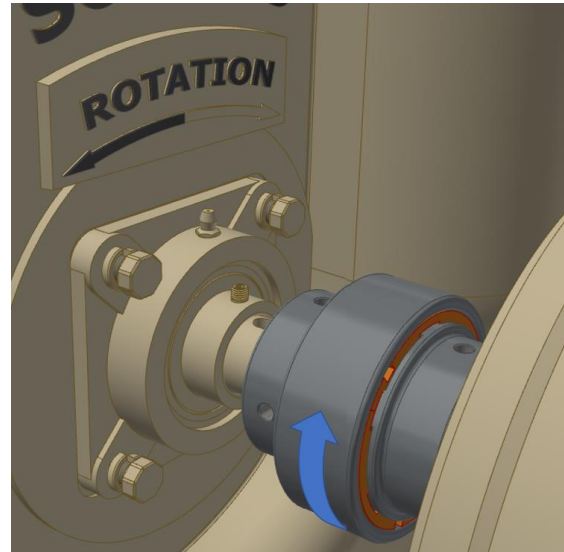




- d. Slide Coupler Locking Collar over flexible insert. Ensure the pins inside locking collar line up with the grooves on the flexible insert.



- e. Rotate Locking Collar opposite to turbine rotation as shown below, making sure the pins on the collar slide on the grooves of the flexible insert. This step is critical to make sure cover and insert do not fall off.



11. Re-install Coupler Guard on to the Vacuum Frame.
12. DO NOT grease bearings during initial Start-Up procedures. The bearings come pre-greased from manufacturer.
13. Turn on Vacuum Turbine and run for 1 hour to reach operating temperature. Turn off producer and check alignment again.

## Questions?

Contact:

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